



DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA-2018-0085]

Denial of Motor Vehicle Defect Petition

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation.

ACTION: Denial of petition for a defect investigation.

SUMMARY: This notice sets forth the reasons for the denial of a petition submitted on August 6, 2014, by Mr. Donald Friedman to the National Highway Traffic Safety Administration's (NHTSA) Office of Defects Investigation (ODI). The petition requests that the agency commence a proceeding to determine the existence of a defect related to motor vehicle safety with respect to the rollover crash performance of the model year (MY) 2010 Chevrolet Tahoe and similarly constructed General Motors (GM) vehicles. The petition alleges that the rollover side curtain air bag system in these vehicles is defectively designed and can allow second and third row occupants to be ejected in rollover crashes. In addition, the petition alleges that the side window glass, rear seat belts, and roof structure are defectively designed. After examination of the petition and available data relating to the rollover crash performance of the subject vehicles, NHTSA does not believe that a safety-related defect currently exists in the design of the rollover side curtain air bags in the MY 2010 Chevrolet Tahoe and other similarly designed Chevrolet Tahoe and GMC Yukon vehicles. The agency has accordingly denied the petition. The petition is hereinafter identified as DP15-004.

FOR FURTHER INFORMATION CONTACT: Mr. Michael Lee, Vehicle Defect Division

C, Office of Defects Investigation, NHTSA, 1200 New Jersey Ave. SE, Washington, DC 20590.

SUPPLEMENTARY INFORMATION: By letter dated August 6, 2014,

Mr. Donald Friedman of Santa Barbara, CA, submitted a petition requesting that the agency investigate the rollover crash performance of the MY 2010 Chevrolet Tahoe. The petitioner alleges that the rollover side curtain air bag (RSCAB) system in the MY 2010 Chevrolet Tahoe and similarly constructed GM vehicles is defectively designed and can allow second and third row occupants to be ejected in rollover crashes when the RSCAB has deployed. The petitioner also broadly requested NHTSA's ODI to conduct an investigation of the "structural and consumer expectation defects in millions of General Motors vehicles that result in severe injury and death." In support of these claims, the petitioner submitted a two-page summary of his investigation and analysis of a rollover crash involving a MY 2010 Chevrolet Tahoe in which a second row passenger was fatally ejected, a summons and complaint from an ensuing lawsuit against GM, an electronic data recorder (EDR) readout from the vehicle, and his rebuttal of various expert opinions offered by GM during its defense of the lawsuit.

The petitioner alleges the following defects in the Chevrolet Tahoe allow ejection of second and third row occupants in rollover crashes despite a fully deployed RSCAB:

- *Safety Belts:* The safety belts in the second seating row of the Chevrolet Tahoe failed to restrain an occupant and allowed that occupant's ejection.
- *Roof Strength:* The roof design fails to provide sufficient structural integrity for the occupant compartment and allows the side windows to fracture. The fractured side windows become ejection portals through which occupants are ejected.

- *Containment/Glazing:* The petitioner states that readily available window glazing technology that would prevent side window fractures in a rollover should have been used in the Chevrolet Tahoe.
- *Window Curtain Tethers:* The RSCAB design employed in the Chevrolet Tahoe did not incorporate tethers that would have prevented occupants from being ejected.

On August 20, 2011, a MY 2010 Chevrolet Tahoe traveling on a highway in McAllen, Texas, rolled over several times in a grassy median after being hit by another vehicle. Of the eight occupants riding in the Chevrolet Tahoe, three were ejected. A 72-year-old female, who was riding in the second row center seat, died as a result of head injuries due to contacting the ground during the crash event. There were no other fatalities.

Although the petitioner claims the fatal occupant was wearing her 3-point seat belt based on forensic and other evidence, the police accident report and GM's analysis indicate she and the two other ejected occupants were not restrained at the time of the crash. Based on the available information, including a review of all forensic evidence provided in the petition, ODI cannot reasonably determine whether or not the fatal occupant was wearing her seat belt and that any potential defect in the seat belt system exists.

The petition also states that the vehicle's roof was defectively designed in that it did not have sufficient strength to protect the occupants in the rollover crash. No data was submitted in support of this allegation. Instead, the petitioner provided his own historical account of GM's purported resistance to, and deceptive conduct in opposition of, increased roof strength standards for passenger vehicles. ODI was unable to draw any conclusions of inference about potential defects from this material.

Mr. Friedman's petition similarly alleged that the side window design was defective because the glazing fractured during the crash and the window opening provided an exit path through which occupants could leave the vehicle during a rollover. Again, no data was provided in support of this conclusory allegation, and ODI is unable to determine if, or how, this material supports the commencement of a defect investigation by NHTSA.

The central allegation in the petition is that the side curtain air bags in the MY 2010 Chevrolet Tahoe are defectively designed. GM began installing RSCABs in the Chevrolet Tahoe and its other full-size and large SUV vehicles with optional or standard third row seating starting in, or around, MY 2007 production. GM also refers to the RSCABs as "rollover-capable roof rail air bags." The RSCAB system in the MY 2007 to 2014 Chevrolet Tahoe and other GM SUVs includes a cushion/bag that covers the side windows from the A- to C-pillar (first and second row seats) and another smaller cushion covering the C- to D-pillar area (third row seat). The larger cushion is tethered to the A-pillar and the smaller cushion is tethered to the D-pillar.

According to NHTSA's report on ejection mitigation, the cushions and tethers in the MY 2007 (and newer) Chevrolet Tahoe appear to have been designed to the state of the art for the mid-to-late 2000's time period.¹ It states the Chevrolet Tahoe's cushion has sufficient size or coverage and stays inflated for several seconds. The RSCABs are typically tethered to the front and rearmost positions but not always. Some designs only have tethers at the A-pillar.

Starting on September 1, 2013, and with a four-year phase-in schedule, all new passenger cars and light trucks must comply with Federal Motor Vehicle Safety Standard (FMVSS) No. 226, *Ejection Mitigation* (49 CFR 571.226). This standard is designed to reduce the occurrences of ejections of vehicle occupants in crashes, especially rollover crashes. According to GM, all

¹ "FMVSS No. 226 Ejection Mitigation - Final Regulatory Impact Analysis," January 2011, NHTSA, pp 5, 19, and 139-143.

Chevrolet Tahoe vehicles manufactured on or after September 1, 2014 were certified to FMVSS No. 226. Although the MY 2010 Chevrolet Tahoe at issue in the petition was not certified as meeting FMVSS No. 226, data evaluating the performance of the MY 2007 Chevrolet Tahoe and peer vehicle RSCABs collected during the development of that standard exists and is relevant to the petitioner's claims.

The ejection mitigation testing specified in FMVSS No. 226 involves impacting a head-form mass into a deployed RSCAB in four locations at each side window and at different impact speeds and at different times after deployment.² The test requires that the impactor mass not displace in excess of 100 mm at each impact location. ODI's review of NHTSA's test results for the second and third row windows showed the MY 2007 Chevrolet Tahoe does not stand out from the other MY 2005-2008 vehicle models tested.³ The Chevrolet Tahoe performed better than other vehicles in some tests while it performed worse in other tests.

ODI also examined complaint, claim, and crash data relating to the petitioner's claims. ODI's consumer complaint database does not contain any complaints of occupant ejections in crashes in any MY 2007-2015 Chevrolet Tahoe (and its similar GMC Yukon) or other similar-vintage, full-size SUV vehicles equipped with RSCABs, so-called peer vehicles.⁴ Several complaints reported being in rollover crashes but none reported a fatality or occupant ejection. Most of these reports also alleged the side curtain air bags did not deploy in the crash.

Early Warning Reporting (EWR) reports of death or injury incidents caused by an alleged defect were also examined by ODI. As of November 28, 2018, ODI received three ejection-

² Ibid, pp 11-21.

³ Ibid, pp 25-29.

⁴ Peer vehicles include 18 models: Audi Q7, Buick Enclave, Cadillac Escalade, Chevrolet Suburban, Chevrolet Traverse, GMC Acadia, Saturn Outlook, Dodge Durango, Jeep Commander, Ford Expedition, Lincoln Navigator, Mercedes-Benz GL-Class, Nissan Armada, Infiniti QX, Toyota Land Cruiser, Toyota Sequoia, Lexus GX, and Lexus LX.

related death reports on MY 2007-2015 Chevrolet Tahoe and GMC Yukon vehicles in GM's EWR data.

The first report states that a single-vehicle, single-occupant rollover crash resulted in the death of an unbelted driver. The RSCABs deployed in the MY 2015 Chevrolet Tahoe⁵, which rolled over several times. The driver was ejected from the vehicle. ODI reviewed the EDR data in this vehicle and did not find any anomalies in the data. This incident involves an ejection, but may be distinguished from the petitioner's claim, which alleges that the rear seat occupants were ejected.

The second report, like the first, was a single-vehicle, single-occupant rollover crash that resulted in an ejection death of an unbelted driver of a MY 2007 Chevrolet Tahoe. However, in this crash, the RSCABs allegedly did not deploy. While a non-deployment is a matter of concern, the defect alleged by Mr. Friedman's petition does not involve a failure to deploy.

The third report indicates a media reporter contacting a police department about "two rollover police fatalities" involving MY 2009 Chevrolet Tahoe vehicles. No other details were included in this report.

ODI conducted a review of crash data in evaluating this petition. NHTSA's Fatality Analysis Reporting System (FARS) tracks all fatal crashes involving motor vehicles occurring on public roadways in the U.S. An analysis of fatal crashes of full-size SUVs, where the vehicle rolled over, indicates the fatal occupant ejection rate of the MY 2007-2014 Chevrolet Tahoe and GMC Yukon vehicles (subject vehicles) does not stand out from the similar-vintage peer vehicles. The Chevrolet Tahoe and GMC Yukon had fatal ejection rates of 15.2 and 6.1 per million registered vehicles, respectively, while five peer vehicle models had rates higher than the

⁵ This vehicle was built in March 2014, prior to when the Tahoe was certified to FMVSS No. 226.

Chevrolet Tahoe, nine models had rates lower than the GMC Yukon, and four models had rates that were between the Chevrolet Tahoe and GMC Yukon rates.

NHTSA's National Automotive Sampling System (NASS) has records of a sampling of crashes and an analysis that may include, among other things, the number of vehicle rolls or turns. A review of this data did not show any fatalities in the subject and peer vehicles involved in rollover crashes. The NASS records contain four, non-fatal incidents involving the subject vehicles (two on Chevrolet Tahoe and two on GMC Yukon) and a total of 10 non-fatal incidents on the peer vehicles, again showing the subject vehicles did not stand out from the peers. The number of vehicle rolls ranged from one quarter turn to nine quarter turns.

Conclusion

Based on the information available at the present time, NHTSA does not believe that a safety-related defect currently exists in the design of the rollover side curtain air bags in the MY 2010 Chevrolet Tahoe and other similarly designed Chevrolet Tahoe and GMC Yukon vehicles. Therefore, the petition is denied. However, the agency will take further action if warranted by changing future circumstances.

Authority: 49 U.S.C. 30162(d); delegations of authority at CFR 1.50 and 501.8.

Jeffrey Mark Giuseppe,

Associate Administrator for Enforcement.

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